



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,629	01/13/2006	Daisuke Ogata	050388-0043	2136
20277 7590 02/04/2008 MCDERMOTT WILL & EMERY LLP 600 13TH STREET, N.W. WASHINGTON, DC 20005-3096			EXAMINER TRIEU, THERESA	
			ART UNIT 3748	PAPER NUMBER
			MAIL DATE 02/04/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/564,629

Applicant(s)

OGATA ET AL.

Examiner

Theresa Trieu

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5 is/are rejected.
- 7) ☒ Claim(s) 4 and 6-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is responsive to the applicants' amendment filed on Nov. 16, 2007.

Claims 1-8 are pending in this application.

Applicants' cooperation in correcting the informalities in the specification is appreciated.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1-3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards (Patent Number 1,516,591) in view of Bachmann et al. (Bachmann) (Patent Application Publication 2003-0072665).

Regarding claims 1-3 and 5, Edwards discloses an inner rotor of an internal gear pump comprising the inner rotor 5 and an outer rotor 7, the inner rotor 5 having a plurality of first teeth 6 and the outer rotor 7 having a plurality of second teeth 8, the plurality of second teeth being

Art Unit: 3748

greater in number by one than the plurality of first teeth, the first teeth 6 having one more tooth than the inner rotor, the inner rotor 5 including a plurality of teeth each comprising a tooth bottom defined by two hypocycloidal curves connected to the tooth bottoms of the two first teeth adjacent the each first tooth (see col. 2, line 5-10), respectively, an engaging portion configured to engage the an outer rotor, and a tooth top defined by a predetermined curve (see col. 1, line 97-100) being an epicycloidal curve. However, Edwards fails to disclose the engaging portion having an involute curve.

Bachmann teaches that it is conventional in the gear pump art to utilize the engaging portion (24 - see Fig. 5) configured to engage an outer rotor and defined by involute curve (see page 4, [0057] paragraph, lines 1-4); a base circle of the hypocycloidal curves has a diameter greater than a base circle of the involute curves, each of the hypocycloidal curves of the tooth bottom connecting with one of the involute curves of the engaging portion at a point inside of the base circle of the hypocycloidal curves, wherein an inclination angle of the internal rotor smaller than 85 degrees (see Fig. 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the engaging portion having an involute curve, as taught by Bachmann in the Edwards apparatus, since the use thereof would have improved the performance and efficiency of the gear pump.

Allowable Subject Matter

2. Claims 4 and 6-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

3. Upon reconsideration, the examiner has withdrawn the rejection under 35 U.S.C. 112, second paragraph, of claim 1.

4. Applicant's arguments filed on Nov. 16, 2007 have been fully considered but they are not persuasive.

- Applicants' arguments filed on Nov. 16, 2007 have been fully considered but they are not persuasive. Applicants argue that there is no suggestion or motivation to modify the reference or to combine the references of Bachmann '665 with Edwards '591.

Edwards and Bachmann references, however, have the same basic a rotary gear pumps to pump a liquid. Since the rotary gear pumps of these references are of the same basic structure and operate in substantially the same manner there would be a suggestion to combine the disclosures.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, Edwards teaches that an inner rotor of an internal gear pump comprising said inner rotor 5 and an outer rotor 7; the inner rotor 5 including a plurality of teeth each comprising a tooth bottom defined by two hypocycloidal curves connected to the tooth bottoms of the two

Art Unit: 3748

first teeth adjacent said each first tooth (see col. 2, line 5-10), respectively, an engaging portion configured to engage said an outer rotor, and a tooth top defined by a predetermined curve (see col. 1, line 97-100) being an epicycloidal curve. Bachmann teaches that it is conventional in the gear pump art to utilize the engaging portion (24 - see Fig. 5) having an involute curve (see page 4, [0057] paragraph, lines 1-4) for improving the performance and efficiency of the gear pump. The examiner maintains that one of ordinary skill would have found it obvious to utilize the engaging portion having an involute curve as taught by Bachmann. The claims do not patentably define over the combination of references as set forth in the above rejections.

- With regard to applicants' argument that Bachmann does not teach/suggest a tooth bottom of the inner rotor being hypocycloids curve (see Remarks section, pages 7 and 8). The examiner respectfully disagrees because Bachmann does disclose a tooth bottom of the inner rotor 7 with a hypocycloids curve (see page 4, [0057] paragraph, line 4-5 and Fig. 5). Applicants also note that a *cycloid/epicycloids tooth crest 18* is a cycloid/epicycloids tooth tip 18 of the inner gear 7 [emphasis added].

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 3748

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theresa Trieu whose telephone number is 571-272-4868. The examiner can normally be reached on Monday-Friday 8:30am- 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on 571-272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TT
February 4, 2008

/Theresa Trieu/
Primary Examiner
Art Unit 3748